

Preparation of linear pentenenitrile

Abstract

5 A process is described for preparing 3-pentenenitrile, characterized by the following process steps:

10 (a) isomerizing a reactant stream which comprises 2-methyl-3-butenenitrile over at least one dissolved or dispersed isomerization catalyst to give a stream 1 which comprises the at least one isomerization catalyst, 2-methyl-3-butenenitrile, 3-pentenenitrile and (Z)-2-methyl-2-butenenitrile,

15 (b) distilling stream 1 to obtain a stream 2 as the top product which comprises 2-methyl-3-butenenitrile, 3-pentenenitrile and (Z)-2-methyl-2-butenenitrile, and a stream 3 as the bottom product which comprises the at least one isomerization catalyst,

20 (c) distilling stream 2 to obtain a stream 4 as the top product which, compared to stream 2, is enriched in (Z)-2-methyl-2-butenenitrile, based on the sum of all pentenenitriles in stream 2, and a stream 5 as the bottom product which, compared to stream 2, is enriched in 3-pentenenitrile and 2-methyl-3-butenenitrile, based on the sum of all pentenenitriles in stream 2,

25 (d) distilling stream 5 to obtain a stream 6 as the bottom product which comprises 3-pentenenitrile and a stream 7 as the top product which comprises 2-methyl-3-butenenitrile.